

REMARKS

Claims 39, 48, 49, 51-58, 60, and 115-117 are pending in the Application. Claims 40, 42, 46, 47, and 59 are cancelled without prejudice. Claims 39, 51-52, 55-57, 60, and 115-117 have been amended. The Title of the Invention has been amended to even more clearly reflect the claims now pending the Application. Applicants have also amended the Abstract of the Invention to even more clearly summarize the claimed invention. A replacement sheet of Fig. 10 is also included herewith that corrects the objections set forth in the Notice of Draftperson's Patent Drawing Review dated March 17, 2003.

In the March 26, 2003 Office Action, claims 39, 40, 42, 46-49, 51-60, and 115-117 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The rejection of claims 40, 42, 46, and 47 is now obviated in light of their cancellation. Claim 39 has been amended to remove the recitation of the objected to "region" aspect as well as to remove the "footprint" aspect of the prior claim.

Claim 39 now recites an electronic device for performing biological operations that include a support substrate and an array of microlocations disposed on the substrate, the array of microlocations including electronically addressable electrodes. Support for this feature can be found, for example, on page 14, lines 17-20 of Applicants' specification. A first collection electrode is disposed on the substrate and adjacent to a first side of the array of microlocations. A second collection electrode is disposed on the substrate and adjacent to a second side of the array of microlocations, the second side of the array being opposite of the first side such that the array of microlocations is disposed between the first collection

electrode and the second collection electrode. The claimed orientation of the first and second collection electrodes relative to the array of microlocations is shown, for example, in Fig. 3 which is reproduced below (showing first and second collection electrodes 50, 52 disposed on opposite sides of the array 48). Finally, the device includes a flow cell supported on the substrate.

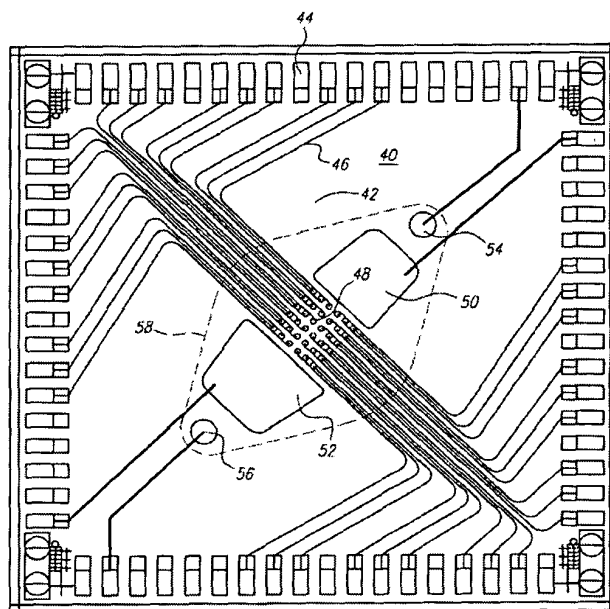


FIG. 3

Similar amendments to those set forth in claim 39 have been made to independent method claim 55. Claim 55 is believed to be in full compliance with 35 U.S.C. § 112. Claims 51 and 52 have been amended to recite the claimed feature that it is the combined area of the collection electrodes in proportion to the footprint of the flow cell. Support for this feature can be found in Applicants' original Abstract of the Invention on page 38, lines

15-16. Claims 56 and 57 have been amended to even more clearly recite the feature that it is the electrodes of the array that are maintained electrically passive/active. Claim 60 has been amended to more clearly recite the feature that the charged biological material is held in place over the array. The abbreviation of "AC" in claim 115 has been rewritten to recite alternating current. In addition, claims 116 and 117 have been amended to even more clearly recite the feature that the "repulsive" and "attractive" aspects of the claims relate to charged biological molecules.


Finally, Applicants submit that the claims are allowable over U.S. Patent No. 5,156,810 (Ribi). Ribi was previously cited against the then-pending claims in the October 4, 2001 Office Action. Ribi relates to a biosensor in which binding of an analyte or a reagent to a specific surface-bound binding pair creates a change in electrical signal, light modulation or structural modulation resulting from a change in the surfactant layer. In the electrical embodiment, pairs of electrodes are formed on a substrate and connected through wires to a source of power and a meter for measuring changes in electrical signals. Col. 16, lines 47-52. Ribi, however, fails to disclose or otherwise suggest at least the claimed feature in which first and second collection electrodes are disposed on the substrate on opposing sides of the array of microlocations. The collection electrodes are uniquely arranged with respect to the array of microlocations and permit charged biological materials to be moved back and forth across the array by the application of attractive and/or repulsive charges with respect to the charged biological materials. This claimed aspect of the invention is entirely absent in Ribi.

Applicant submits that the claims are allowable. A notice of allowability is respectfully requested.

Respectfully submitted,

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